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A231/A126

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On the formal reduction of the state of...

$$\frac{\partial}{\partial \alpha} (B \tilde{M}_{\alpha\beta}) - \frac{\partial A}{\partial \beta} \tilde{M}_\alpha + \frac{\partial}{\partial \beta} (A \tilde{M}_\beta) - \frac{\partial B}{\partial \alpha} \tilde{M}_{\beta\alpha} - AB \left(\frac{\tilde{Q}_\beta}{R_1} - \frac{\tilde{Q}_\alpha}{R_{12}} \right) = 0,$$

$$AB \left(\frac{\tilde{M}_\alpha}{R_1} + \frac{\tilde{M}_\beta}{R_2} + \frac{\tilde{M}_{\beta\alpha} - \tilde{M}_{\alpha\beta}}{R_{12}} \right) + \frac{\partial}{\partial \alpha} (B \tilde{Q}_\alpha) + \frac{\partial}{\partial \beta} (A \tilde{Q}_\beta) = 0, \quad (1)$$

$$\frac{\partial}{\partial \alpha} (B \tilde{M}_{\alpha\beta}) + \frac{\partial A}{\partial \beta} \tilde{M}_\alpha - \frac{\partial}{\partial \beta} (A \tilde{M}_\beta) - \frac{\partial B}{\partial \alpha} \tilde{M}_{\beta\alpha} + AB \tilde{Q}_\beta = 0,$$

$$\frac{\partial}{\partial \alpha} (B \tilde{M}_\alpha) - \frac{\partial A}{\partial \beta} \tilde{M}_{\alpha\beta} + \frac{\partial}{\partial \beta} (A \tilde{M}_{\beta\alpha}) - \frac{\partial B}{\partial \alpha} \tilde{M}_\beta - AB \tilde{Q}_\alpha = 0,$$

$$\tilde{M}_{\alpha\beta} + \tilde{M}_{\beta\alpha} = 0.$$

The supplementary quasi-invariable equations $\tilde{M}_{\alpha\beta} + \tilde{M}_{\beta\alpha} = 0$. (2) is attached to this system. Hooke's law can be expressed by three non-differential quasi-invariable equations, which connect the complex forces and moments. These complementary equations are:

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$$\begin{aligned}\tilde{\mathcal{M}}_a &= i \frac{h}{\sqrt{3(1-\mu^2)}} (\tilde{\mathcal{M}}_b - \mu \tilde{\mathcal{N}}_a), \\ \tilde{\mathcal{M}}_b &= i \frac{h}{\sqrt{3(1-\mu^2)}} (\tilde{\mathcal{M}}_a - \mu \tilde{\mathcal{N}}_b), \\ \tilde{\mathcal{N}}_{ab} &= i \frac{h}{\sqrt{3(1-\mu^2)}} (\tilde{\mathcal{N}}_{ab} + \mu \tilde{\mathcal{N}}_{ab}).\end{aligned}\quad (3)$$

The limit conditions can be expressed in a complex form. In the present article the authors show, on the basis of the above equations, that the theory of thin elastic isotropic shells applied to forces and moments can be expressed only by the quasi-invariable moments, the moments acting on a membraneless shell, the median surface of which maintains the geometry of the median surface of the shell, but provided with imaginary thickness and modified elastic characteristics. For this purpose, the authors introduce:

$$h_* = i \sqrt{\frac{h}{3(1-\mu^2)}} \quad (4),$$

h_* being the semi-thickness of the membraneless shell. Then, considering $\mu_* = -\mu$, to be the Poisson coefficient for the membraneless shell, the equations (3) obtain the form of the expressions

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$$\begin{aligned}\widetilde{\mathfrak{M}}_a &= -\frac{2Eh^3}{3(1-\mu^2)}(\chi_1 + \mu_* \chi_2), \quad \widetilde{\mathfrak{M}}_b = -\frac{2Eh^3}{3(1-\mu^2)}(\chi_2 + \mu_* \chi_1) \\ \widetilde{\mathfrak{M}}_{ab} &= 2Eh^3 \frac{1}{1+\mu_*} \tau^*\end{aligned}\quad |(7)$$

These equations are identical with the equations of Hooke, which connect the moments with the bending components of the distortion. The values χ_1 , χ_2 , and τ^* , represent the components of the bending distortion of the membrane-less shell. Introducing the relations (5) into the first three equations of (1), one obtains the relations

$$\begin{aligned}-\frac{\partial}{\partial \alpha}(B\chi_2) + \frac{\partial A}{\partial \beta} \tau^* + \frac{\partial}{\partial \beta}(A\tau^*) + \frac{\partial B}{\partial \alpha} \chi_1 - AB\left(\frac{\zeta_2}{R_1} + \frac{\zeta_1}{R_{12}}\right) &= 0, \\ \frac{\partial}{\partial \alpha}(B\tau^*) + \frac{\partial A}{\partial \beta} \chi_2 - \frac{\partial}{\partial \beta}(A\chi_1) + \frac{\partial B}{\partial \alpha} \tau^* + AB\left(\frac{\zeta_1}{R_2} + \frac{\zeta_2}{R_{12}}\right) &= 0, \\ -AB\left(\frac{\chi_2}{R_1} + \frac{\chi_1}{R_2} + \frac{2\tau^*}{R_{12}}\right) + \frac{\partial}{\partial \alpha}(B\zeta_2) - \frac{\partial}{\partial \beta}(A\zeta_1) &= 0,\end{aligned}\quad |(8)$$

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after considering the law of Hooke for complex cutting forces

$$\tilde{Q}_a = \frac{2Eh^2}{3(1-\mu^2)} \zeta_a, \quad (9)$$

$$\tilde{Q}_b = -\frac{2Eh^2}{3(1-\mu^2)} \zeta_b.$$

The system (8) coincides with the continuity equations of the distortion, which connects the components of the bending distortion. For the membrane-less shell, there is a Hooke's law between the complex cutting forces and the values ζ_1^* , ζ_2^* . Thus, the fourth and the fifth equations of the system (1) have to be solved, to which the equations (2), (7) and (8) will be attached. The limit conditions can be transcribed in values which are specific for the new expression, starting from the quasi-invariable limit conditions. This expression simplifies the calculation; however it is necessary to mention several calculation rules for the value of μ^* . If λ is an arbitrary complex value, then $i\mu^*\lambda = -\mu^*i\lambda$, and then $h_*\mu^*\lambda = -\mu^*h_*\lambda$, μ is anti-commutative by multiplying it with h_* . It also results: $\mu^* = \mu_*\mu_* = \mu$. There are 3 Soviet bloc references. X

SUBMITTED: March 12, 1960

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VISARION, V.; STANESCU, C.

Investigation of the semi-invariants of the statistical-geometric analogy for thin elastic shells of isotropic and orthotropic materials. Acta techn Hung 28 no.1/2:199-207 '60. (EEAI 9:7)

1. Institut de Mecanica Aplicata "Traian Vuia", Bucuresti.
(Elasticity)

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27421

R/008/61/000/004/002/003

D238/D304

AUTHORS: Petre, A., Stănescu, C., and Librescu, L.

TITLE: Aeroelastic divergence of box-beam wings, taking into consideration the fastening restraints

PERIODICAL: Studii și cercetări de mecanică aplicată, nr. 4,
1961, 755 - 764

TEXT: The article presents a solution of the problem of aero-elastic divergence in the case of lifting surfaces of a constant cross-section, taking into consideration the spanwise moment and the effect of the fastening restraints. Starting with the hypothesis of A. A. Umanskiy \angle Abstracter's note: Umanskiy's hypothesis not stated \angle , according to which the longitudinal motion $u(y, s)$, in case of impeded twisting, is proportional to the $\omega(s)$ motion of the free twisting, the authors deduce

$$u(y, s) = \omega(s) \Psi(y) \quad (1)$$

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Aeroelastic divergence....

in which Ψ (s) is a function which has to be determined, while y and s are variable values along the span, and along the contour of the transversal section, respectively. On the base of this equation, and taking the method of Galerkin into consideration, the authors deduce the fundamental equation of impeded twisting

$$\bar{k}^2 \frac{d^4 \varphi}{dy^4} - \frac{d^2 \varphi}{dy^2} = - \frac{m_t}{GI_d} + \frac{\bar{k}^2}{GI_e} \frac{d^2 m_t}{dy^2} \quad (8)$$

in which \bar{k} is expressed by: $\bar{k} = \sqrt{\frac{EI}{\omega}} \frac{w}{\sqrt{GI_d}}$ (9)

ω being the de-levelling coefficient defined by Ebner, GI_d the rigidity to the free twisting, φ the twisting angle, I_w the inertia moment, and m_t the twisting moment distributed along the span.

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Abstracter's note: the other symbols of (8) are not defined, while the Galerkin method is not stated. Denoting the wing chord with c , the distance between the elastic axis and the line of the aerodynamic centers with e , the dynamic pressure with $q = \frac{\rho}{2} V^2$, and the gradient of the lifting curve with $\frac{dC_z}{di}$, the differential equation of the aeroelastic divergence in case of impeded twisting may be expressed by

$$\bar{k}^2 \frac{d^4\varphi}{dy^4} + \left(\frac{\bar{k}^2 q c e \frac{dC_z}{di}}{GI_c} - 1 \right) \frac{d^2\varphi}{dy^2} - \frac{q c e \frac{dC_z}{di}}{GI_d} \varphi = 0 \quad (11)$$

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Considering

$$X = \frac{b^2 q c e \frac{dC}{di}}{4G I_d}; k = \frac{4\pi^2}{b^2} \quad (13)$$

to be the zero-dimensional parameters, the equation (11) changes into

$$k \frac{d^4 \varphi}{d\xi^4} + [k(1-\gamma) - 1] \frac{d^2 \varphi}{d\xi^2} - X \varphi = 0 \quad (14)$$

The solution of this equation is

$$\varphi = C_1 \sin \alpha \xi + C_2 \cos \beta \xi + C_3 \sinh \beta \xi + C_4 \cosh \beta \xi \quad (15)$$

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in which α and β are expressed by:

$$\alpha = \sqrt{\frac{k(1-v)X - 1 + \sqrt{k^2(1-v)^2 X^2 + 2k(1+v)X + 1}}{2k}}, \quad (16)$$

$$\beta = \sqrt{\frac{-k(1-v)X + 1 + \sqrt{k^2(1-v)^2 X^2 + 2k(1+v)X + 1}}{2k}}.$$

The integrating constants C_1 , C_2 , C_3 , and C_4 may be determined on the basis of the following two conditions: 1) The conditions:

$$\varphi = 0 \quad \text{and} \quad u = 0 \quad (18)$$

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have to be satisfied at the fastening section of the wing; and
 2) the conditions:

$$M_t = 0 \quad \text{and} \quad \dot{\theta}_y = 0 \quad (23)$$

have to be satisfied at the free end of the wing, M_t being the twisting moment. The authors finally deduce the fundamental equation of the aeroelastic divergence of single-box-beam wings of constant cross-section, taking into consideration the fastening restraints:

$$\frac{2k\nu X}{\operatorname{ch}\sqrt{\frac{1-k(1-\nu)X+\sqrt{k^2(1-\nu)^2X^2+2k(1+\nu)X+1}}{2k}}} - \nu\sqrt{kX}[k(1-\nu)X-1] \times \\ \times \sin\sqrt{\frac{k(1-\nu)X-1+\sqrt{k^2(1-\nu)^2X^2+2k(1+\nu)X+1}}{2k}} \times \quad (28)$$

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$$\begin{aligned} & \times \operatorname{th} \sqrt{\frac{1 - k(1 - v)X + \sqrt{k^2(1 - v)^2 X^2 + 2k(1 + v)X + 1}}{2k}} + \\ & + [k^2(1 - v)^2 X^2 + 2kX + 1] \times \\ & \times \cos \sqrt{\frac{k(1 - v)X - 1 + \sqrt{k^2(1 - v)^2 X^2 + 2k(1 + v)X + 1}}{2k}} = 0, \end{aligned} \quad (28)$$

This equation was solved by an I.F.A.-2 electronic computer at the Institutul de fizica al Academiei RPR (Institute of Physics of the Rumanian Academy). There are 2 figures, 1 table and 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows:
R. Bisplinghoff, H. Ashley, R. Halfman, "Aeroelasticity", Cambridge, 1955.

SUBMITTED April 18, 1961

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106200

33739
R/008/61/000/006/001/005
D272/D304

AUTHORS: Petre, Augustin, and Stănescu, Cristian

TITLE: Aeroelastic distribution of aerodynamic loads for lifting surfaces of constant cross-section, taking into consideration the end restraints

PERIODICAL: Studii și cercetări de mecanică aplicată, no. 6, 1961,
1193 - 1203

TEXT: The problem of designing the structure for distribution of the aerodynamic loads to correspond to a deformed flexible structure is discussed in the case when the flight velocity is below the critical divergence velocity. In this case the increase of the twist and of the lift are convergent, reaching a state of stable equilibrium, and the problem of finding the load distribution on a wing span, corresponding to the condition of stable equilibrium. The solution of this problem is presented starting from the equations of the theory of restrained twist of thin-walled rods with closed profile, adding the hypothesis of non-deformable cross-sec-

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tion. By introducing a parameter, it was possible to derive the relation for the torsion pair, and that for the torsion angle. Further derivations, after introducing the distance between the elastic axis and the line of the aerodynamic centers, and the distance between the elastic axis and the line of the gravity centers enabled the authors to obtain finally the differential equation which conditions the aeroelastic distribution of the load in the span, taking into consideration too, the effects of the end restraints which is further simplified by dimensionless parameters and then solved obtaining two roots. For practical cases, the ratio of the lift distribution to that of the rigid wing has been calculated. There are 4 figures and 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: R. Bisplinghoff, H. Ashley, and R. Halfman, Aeroelasticity, Cambridge, 1955.

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B125/B204

10.9100

16.1300

AUTHORS:

Visarion, V., ^a Stanescu, ^{Cr} (Bukharest)

TITLE:

Investigation of the quasiinvariants of the static-geometric analogy for thin elastic shells

PERIODICAL:

Prikladnaya matematika i mekhanika, v. 25, no. 1, 1961,
68-75TEXT: The authors apply the methods developed in previous papers to
orthotropic shells and find the factor $\frac{2h^2 \sqrt{E_\alpha E_\beta}}{\sqrt{3(1-\mu_\alpha \mu_\beta)}}$, by means of which

systems of equilibrium equations and continuity equations may be united to a single complex system. Besides, the Hooke equations may in this way be reduced to a system of three linear equations without differential between the complex stresses. The previous papers mentioned are by A. L. Gol'denveyzer dealing with isotropic shells, and by V. V. Novozhilov dealing with the static-geometric analogy. In the first part

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of the paper the quasiinvariants are dealt with. According to static-geometric analogy, the stresses, moments, stress functions, displacements, and deformation components, which enter into the homogeneous equations of the theory of thin shells, may be divided into two groups: Here, one element of the second group containing displacements and deformations corresponds to each element of the first, containing stresses, moments, and stress functions. The ratio (element e of the first group / element e^* of the second group) has the dimension of a force. The complex elements then have the form $S_e = e + i \xi(e)e^*$. As quasiinvariant, a

complex element (1.1) is described, to which the same element multiplied by a constant factor corresponds in static-geometric analogy. The authors then investigate the conditions at which S_e is a quasiinvariant.

The conditions of quasiinvariance read $S_e = K S_e^*$ or also

$e + i \xi(e)e^* = K[e^* + i \xi^*(e)e]$. Herefrom, one obtains by comparing coefficients $1 = K i \xi^*(e)$, $i \xi(e) = K$, and further $\xi^*(e) = -1/\xi(e)$ (1.5). $\xi(e)$ has the dimension of a force: $|\xi(e)| = |F|$. The most general expression composed of all constants entering the static-geometric

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analogy has the form (1.7).

$$\xi(e) = F_1^m F_2^{m'} D_1^p D_2^{p'} \left(\frac{A_{11}}{A_{22}} \right)^q \left(\frac{A_{21}}{A_{11}} \right)^{q'} \left(2 \frac{A_{12}}{A_{22}} \right)^r \left(2 \frac{A_{22}}{A_{11}} \right)^{r'} \left(2 \frac{A_{31}}{A_{22}} \right)^s \left(2 \frac{A_{21}}{A_{22}} \right)^{s'} \times \\ \times \left(4 \frac{A_{32}}{A_{22}} \right)^t \left(\frac{a_{11}}{a_{11}^2} \right)^u \left(\frac{a_{21}}{a_{11}} \right)^{u'} \left(-\frac{a_{12}}{a_{11}} \right)^v \left(-\frac{a_{22}}{a_{11}} \right)^{v'} \left(-\frac{a_{31}}{a_{11}} \right)^x \left(-\frac{a_{32}}{a_{11}} \right)^{x'} \left(\frac{a_{32}}{a_{11}} \right)^w \quad (1.7)$$

Here, $\xi(e)$ is assumed to be independent of the selected element, and then $m=m'$, $p=p'$, $q=q'$, $r=r'$, $s=s'$, $u=u'$, $v=v'$, $z=z'$ must hold; herefrom follows (1.8). Отсюда

$$\xi = (F_1 F_2)^m (D_1 D_2)^p \left(\frac{A_{12} A_{21}}{A_{22}^2} \right)^q \left(4 \frac{A_{12} A_{22}}{A_{22}^2} \right)^{q'} \left(4 \frac{A_{31} A_{32}}{A_{22}^2} \right)^s \left(4 \frac{A_{32}}{A_{22}} \right)^t \times \\ \times \left(\frac{a_{12} a_{21}}{a_{11}^2} \right)^u \left(\frac{a_{12} a_{22}}{a_{11}^2} \right)^{u'} \left(\frac{a_{31} a_{32}}{a_{11}^2} \right)^x \left(\frac{a_{32}}{a_{11}} \right)^w \quad \text{Lese 69 oben}$$

Further, we write ξ for $\xi(e)$. In the case of (1.5) there follows $q = -u$, $r = -v$, $s = -z$, $t = -w$, and herefrom (1.9).

$$\xi = \left(\frac{F_1 F_2}{D_1 D_2} \right)^{1/4} \left(\frac{A_{12} A_{21}}{a_{11} a_{21}} \frac{a_{11}^2}{A_{22}^2} \right)^q \left(4 \frac{A_{12} A_{22}}{a_{12} a_{22}} \frac{a_{11}^2}{A_{22}^2} \right)^{q'} \left(4 \frac{A_{31} A_{32}}{a_{31} a_{32}} \frac{a_{11}^2}{A_{22}^2} \right)^s \left(4 \frac{A_{32}}{a_{32} A_{22}} \right)^t \quad (1.9)$$

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q, r, s, t here remain arbitrary. If ξ is defined in such a manner that $S_e = e + i\xi e'$ is a quasiinvariant, then also $S'_e = e + i\xi^\lambda e'$ is a quasiinvariant, if λ is dimensionless. In static-geometric analogy it corresponds to the condition $\lambda \leftrightarrow 1/\lambda$. Therefore, the indefinite factors may be omitted in (1.9), and it then follows that

$\xi = (F_1 F_2 / D_1 D_2)^{1/4}$ (1.11). With the notation used in the appendix there

follows $\xi = 2 h^2 \sqrt[4]{\frac{1}{9} \frac{A_{11}}{a_{11}} \frac{A_{22}}{a_{22}}}$ (1.12), and if the technical constants are

used: $\xi = 2 h^2 \sqrt[4]{\frac{E_\alpha E_\beta}{3 \Delta_1}} \sqrt[4]{(1 - \gamma_{\alpha} v_\alpha)(1 - \gamma_{\beta} v_\beta)}$ (1.13), where

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$$\Delta_1 = \begin{vmatrix} 1 & -\mu_\alpha & n_\alpha \\ -\mu_\beta & 1 & n_\beta \\ v_\alpha & v_\beta & 1 \end{vmatrix} \quad (1.14).$$

Above all, one obtains for

isotropic and orthotropic shells $\xi = \frac{2h^2 E}{\sqrt{3(1-\mu^2)}}$ and $\zeta = \frac{2h^2 \sqrt{E_\alpha E_\beta}}{\sqrt{3(1-\mu_\alpha \mu_\beta)}}$

respectively. The groups of the relations corresponding to one another in static-geometric analogy may be united into quasiinvariant complex systems, where the newly introduced functions turn out to be quasi-invariants. Thus, the systems of the equations of stress equilibrium and the equations for the continuity of deformations are in this way united to one single system, where the new unknown quantities are complex:

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$$\begin{aligned}
 & \frac{\partial}{\partial \alpha} (BT_1) + \frac{\partial A}{\partial \beta} S_1 - \frac{\partial}{\partial \beta} (AS_2) - \frac{\partial B}{\partial \alpha} T_2 - AB \left(\frac{N_1}{R_1'} - \frac{N_2}{R_{12}} \right) + ABX = 0 \\
 & \frac{\partial}{\partial \alpha} (BS_1) - \frac{\partial A}{\partial \beta} T_1 + \frac{\partial}{\partial \beta} (AT_2) - \frac{\partial B}{\partial \alpha} S_2 - AB \left(\frac{N_2}{R_1'} - \frac{N_1}{R_{12}} \right) + ABY = 0 \\
 & AB \left(\frac{T_1}{R_1'} + \frac{T_2}{R_2'} + \frac{S_2 - S_1}{R_{12}} \right) + \frac{\partial}{\partial \alpha} (BN_1) + \frac{\partial}{\partial \beta} (AN_2) + ABZ = 0 \\
 & \frac{\partial}{\partial \alpha} (BH_1) + \frac{\partial A}{\partial \beta} G_1 - \frac{\partial}{\partial \beta} (AG_2) - \frac{\partial B}{\partial \alpha} H_2 + ABN_3 = 0 \\
 & \frac{\partial}{\partial \alpha} (BG_1) - \frac{\partial A}{\partial \beta} H_1 + \frac{\partial}{\partial \beta} (AH_2) - \frac{\partial B}{\partial \alpha} G_2 - ABN_1 = 0 \\
 & S_1 + S_2 + \frac{H_1}{R_1'} + \frac{H_2}{R_2'} + \frac{G_1 - G_2}{R_{12}} = 0 \tag{2.1}
 \end{aligned}$$

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$$\begin{aligned}
 T_1 &= T_1 + i\xi \omega_2, & S_1 &= S_1 + i\xi \tau^{(2)}, & N_1 &= N_1 - i\xi \zeta_2 \\
 T_2 &= T_2 + i\xi \omega_1, & S_2 &= S_2 + i\xi \tau^{(1)}, & N_2 &= N_2 + i\xi \zeta_1 \tag{2.2} \\
 G_1 &= G_1 + i\xi e_2, & H_1 &= H_1 - i\xi \omega^{(2)} \\
 G_2 &= G_2 + i\xi e_1, & H_2 &= H_2 - i\xi \omega^{(1)}
 \end{aligned}$$

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In addition, there is $\vec{H}_1 + \vec{H}_2$. Also the relations between the stresses and stress functions on the one hand, and the relations between the deformations and displacements on the other hand, may be combined to one single system between complex stresses and complex stress functions:

$$T_1 = \frac{1}{B} \frac{\partial}{\partial \beta} \left(\frac{1}{B} \frac{\partial c}{\partial \beta} + \frac{b}{R_1'} - \frac{a}{R_{12}} \right) + \frac{1}{AB} \frac{\partial B}{\partial \alpha} \left(\frac{1}{A} \frac{\partial c}{\partial \alpha} + \frac{a}{R_1'} - \frac{b}{R_{12}} \right) - \frac{n}{R_{12}} \quad 2.4$$

$$T_2 = \frac{1}{A} \frac{\partial}{\partial \alpha} \left(\frac{1}{A} \frac{\partial c}{\partial \alpha} + \frac{a}{R_1'} - \frac{b}{R_{12}} \right) + \frac{1}{AB} \frac{\partial A}{\partial \beta} \left(\frac{1}{B} \frac{\partial c}{\partial \beta} + \frac{b}{R_1'} - \frac{a}{R_{12}} \right) + \frac{n}{R_{12}}$$

$$S_1 = -\frac{1}{B} \frac{\partial}{\partial \beta} \left(\frac{1}{A} \frac{\partial c}{\partial \alpha} + \frac{a}{R_1'} - \frac{b}{R_{12}} \right) + \frac{1}{AB} \frac{\partial B}{\partial \alpha} \left(\frac{1}{B} \frac{\partial c}{\partial \beta} + \frac{b}{R_1'} - \frac{a}{R_{12}} \right) + \frac{n}{R_2}$$

$$S_2 = \frac{1}{A} \frac{\partial}{\partial \alpha} \left(\frac{1}{B} \frac{\partial c}{\partial \beta} + \frac{b}{R_1'} - \frac{a}{R_{12}} \right) - \frac{1}{AB} \frac{\partial A}{\partial \beta} \left(\frac{1}{A} \frac{\partial c}{\partial \alpha} + \frac{a}{R_1'} - \frac{b}{R_{12}} \right) + \frac{n}{R_1}$$

$$N_1 = -\frac{1}{B} \frac{\partial n}{\partial \beta} - \frac{1}{R_2'} \left(\frac{1}{A} \frac{\partial c}{\partial \alpha} + \frac{a}{R_1'} - \frac{b}{R_{12}} \right) - \frac{1}{R_{12}} \left(\frac{1}{B} \frac{\partial c}{\partial \beta} + \frac{b}{R_1'} - \frac{a}{R_{12}} \right)$$

$$N_2 = \frac{1}{A} \frac{\partial n}{\partial \alpha} - \frac{1}{R_1'} \left(\frac{1}{B} \frac{\partial c}{\partial \beta} + \frac{b}{R_2'} - \frac{a}{R_{12}} \right) - \frac{1}{R_{12}} \left(\frac{1}{A} \frac{\partial c}{\partial \alpha} + \frac{a}{R_1'} - \frac{b}{R_{12}} \right)$$

$$G_1 = \frac{1}{B} \frac{\partial b}{\partial \beta} - \frac{1}{AB} \frac{\partial R}{\partial \alpha} - \frac{c}{R_1'} \quad H_1 = \frac{1}{B} \frac{\partial b}{\partial \beta} - \frac{1}{AB} \frac{\partial a}{\partial \alpha} b + \frac{c}{R_{12}} - n$$

$$G_2 = \frac{1}{A} \frac{\partial a}{\partial \alpha} + \frac{1}{AB} \frac{\partial A}{\partial \beta} b - \frac{c}{R_1'} \quad H_2 = -\frac{1}{A} \frac{\partial b}{\partial \alpha} + \frac{1}{AB} \frac{\partial A}{\partial \beta} a - \frac{c}{R_{12}} - n$$

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$$a = a + i\xi u, \quad b = b + i\xi v, \quad c = c + i\xi w \quad (2.5)$$

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Investigation of the quasiinvariants ...

$n = \frac{1}{2AB} \left[\frac{\partial}{\partial \beta} (Aa) - \frac{\partial}{\partial \alpha} (Bb) \right] \quad (2.6)$. Next, equations with various quantities are investigated. According to the results of the foregoing paragraph, it is possible to write down the Hooke equations as three linear relations without differential, which connect the complex moments \vec{G}_1 , \vec{G}_2 , H_1 and the complex stresses \vec{T}_1 , \vec{T}_2 , \vec{S}_2 with one another.

$$G_1 = -\frac{2h^3}{3} A_{22} \left(\frac{A_{11}}{A_{22}} x_1 + \frac{A_{12}}{A_{22}} x_2 + 2 \frac{A_{13}}{A_{22}} \tau \right)$$

$$G_2 = -\frac{2h^3}{3} A_{22} \left(\frac{A_{21}}{A_{22}} x_1 + x_2 + 2 \frac{A_{23}}{A_{22}} \tau \right)$$

$$H_1 = -H_2 = \frac{2h^3}{3} A_{22} \left(\frac{A_{31}}{A_{22}} x_1 + \frac{A_{32}}{A_{22}} x_2 + 2 \frac{A_{33}}{A_{22}} \tau \right)$$

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Investigation of the quasiinvariants ...

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$$G_1 = \frac{ic_3}{2} \{ a_{21} [(1 + \lambda_1) T_1 + (1 - \lambda_1) \bar{T}_1] + a_{22} [(1 + \lambda_2) T_2 + (1 - \lambda_2) \bar{T}_2] + a_{23} [(1 + \lambda_3) S_1 + (1 - \lambda_3) \bar{S}_1] \}$$

$$G_2 = \frac{ic_3}{2} \left\{ a_{11} \left[\left(1 + \frac{1}{\lambda_1} \right) T_1 + \left(1 - \frac{1}{\lambda_1} \right) \bar{T}_1 \right] + a_{12} [(1 + \lambda_4) T_2 + (1 - \lambda_4) \bar{T}_2] + a_{13} [(1 + \lambda_5) S_1 + (1 - \lambda_5) \bar{S}_1] \right\}$$

$$H_1 = \frac{ic_3}{4} \{ a_{31} [(1 + \lambda_6) T_1 + (1 - \lambda_6) \bar{T}_1] + a_{32} [(1 + \lambda_7) T_2 + (1 - \lambda_7) \bar{T}_2] + a_{33} [(1 + \lambda_8) S_1 + (1 - \lambda_8) \bar{S}_1] \}$$

где where

$$c_3 = h \sqrt[4]{\frac{A_{11}A_{22}}{9a_{11}a_{22}}}, \quad \lambda_1 = \frac{A_{12}}{a_{11}} \sqrt{\frac{a_{11}a_{21}}{A_{11}A_{22}}}, \quad \lambda_2 = \sqrt{\frac{A_{11}a_{11}}{A_{22}a_{22}}}$$

$$\lambda_3 = -\frac{2A_{13}}{a_{13}} \sqrt{\frac{a_{11}a_{23}}{A_{11}A_{23}}}, \quad \lambda_4 = \frac{A_{21}}{a_{12}} \sqrt{\frac{a_{11}a_{22}}{A_{11}A_{22}}}, \quad \lambda_5 = -\frac{2A_{12}}{a_{12}} \sqrt{\frac{a_{11}a_{21}}{A_{11}A_{21}}}$$

$$\lambda_6 = -\frac{2A_{31}}{a_{31}} \sqrt{\frac{a_{11}a_{22}}{A_{11}A_{22}}}, \quad \lambda_7 = -\frac{2A_{32}}{a_{32}} \sqrt{\frac{a_{11}a_{23}}{A_{11}A_{23}}}, \quad \lambda_8 = \frac{4A_{33}}{a_{33}} \sqrt{\frac{a_{11}a_{21}}{A_{11}A_{21}}}$$

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Investigation of the quasiinvariants ...

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Thus, the systems (2.1), (2.4), and (3.1) combine all principal equations of the theory of thin homogeneous shells. There are 11 references: 8 Soviet-bloc and 2 non-Soviet-bloc.

SUBMITTED: March 28, 1960

Card 10/10

OROVEANU, T.; STANESCU, Cr.

Aeroelastic divergence of rotary supporting surfaces with variable section. Studii cerc nec apl 13 no.4:837-847 '62.

PETRE, Augustin; STANESCU, Cristian

Aeroelastic effects on the aileron effectiveness by
considering the influence of the end restraints.
Studii cerc nec apl 14 no. 6: 1323-1337 '63.

L 33219-65 EWP(m)/EWG(v)/ENT(d)/EWT(l)/EWT(m)/FCS(k)/FG(m)/T-2/EWA(d)/EWA(1)/
EWP(w) Pd-1/Pe-5 EM

ACCESSION NR: AP5007847

R/0019/64/009/006/1335/1350
32
35
B

AUTHOR: Petre, A.; Stanescu, C.

TITLE: Effect of aeroelasticity on aileron effectiveness, with consideration of
end restraints

SOURCE: Revue Roumaine des sciences techniques. Serie de mecanique appliquee,
v. 9, no. 6, 1964, 1335-1350

TOPIC TAGS: aeroelasticity, aeroelastic effect, aileron, aileron effectiveness,
end restraint

ABSTRACT: The authors present a study of aileron effectiveness for wings of constant cross-section, the wing being considered as a thin-walled rod. The differential equation of the problem is established and integrated under the assumption that the stresses normal to the cross-section, caused by torsion, are proportional to the unit axial strain. The relation between the rotation velocity of the aircraft about the longitudinal axis and the deflection of the wing ailerons for a steady-state motion is established. The reverse critical velocity may be determined from this relation. For current values of the quantities which characterize

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ACCESSION NR: AP5007847

the thin-walled rods, the formula obtained permits simplifications and the results are expressed in terms of nondimensional parameters in tables and diagrams.

ASSOCIATION: [Petre] Polytechnic Institute, Bucharest; [Stanescu] Institute for Applied Mechanics, Academy of the R.P.R., Bucharest.

SUBMITTED: 00

ENCL: 00

SUB CODE: ME

NO REF SOV: 000

OTHER: 002

Card 2/2

RUMANIA

VEVERA, Val., MD; STANESCU, D., MD; IONESCU, Cristina, MD;
MEDIANU, I., MD.

Medical Clinic of the "Fundeni" Clinical Hospital (Clinica
Medicala a Spitalului clinic "Fundeni"); Director:
Professor C. C. Dimitriu. - (for all)

Bucharest, Viiata Medicala, No 5, 1 Mar 63, pp 335-340.

"Arterial Hypertension Secondary to Unilateral Stenosis of
the Renal Artery."

(4)

STANESCU, Dan, arh.

Universal windowless industrial buildings. Ind text Rum 13
no.12:498-509 D '62.

1. Institutul de proiectari al ~~industriei uscăre.~~

STANESCU, Dan C., student. (Iasi)

A new nesting place of the black stork *Ciconia nigra* L. in the
Southern Transylvania. Natura Biologie 14 no. 1:85 Ja-F'62.

"APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652820013-3

DUCA, A.; PUSCASU, Mariana; STANESCU, Doina

Electrolytic sediment of rhenium beside different quantities
of molybdenum. Studii cerc chimie Cluj 14 no.2:351-356 '63.

L. Institute of Chemistry, Rumanian Academy, Cluj Branch.

APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652820013-3"

STANESCU D.

6

The manufacture of high-quality ferromanganese from indigenous minerals. Al Rău, D. Stanescu, D. Bricean, and C. Popovici. Comun. Acad. Republicene Române 3, 131-3 (1953). The native oxide ores were found to be unsatisfactory for the prep. of high-quality ferromanganese, as they only yielded a product contg. 60-65% Mn and 0.5-1.15% P. A preferential reduction in the blast furnace made it possible to pass 81% of the Mn into the slag, while 3.6% of the Mn content of the ore was lost through volatilization. The remaining Mn and nearly all the Fe and P were transferred into the spiegeleisen. The resulting slag (synthetic mineral) yielded a ferromanganese of 70-80% Mn and a max. of 0.22% P. In order to control the Si content, dolomite was used for part of the limestone necessary to prep. this synthetic mineral. This method thus allows the prep. of a high-grade ferromanganese from low-grade ores. Previously known deposits of rhodocite in Bacovina were found to contain Mn carbonate and not silicate. The burned carbonate mixed with the synthetic mineral was also used with good success for the prep. of high-quality ferromanganese. Francois Kertesz

STANESCU, D.

E-2

RUMANIA/Analytic Chemistry - Analysis of Inorganic Substances.

Abs Jour : Ref Zhur - Khimiya, No 14, 1958, 46434
Author : A. Duca, D. Stanescu
Inst : Academy of Sciences of Rumania, Cluj Section.
Title : Determination of Some Microelements of Soil (Cu, Pb, Ni, Co and Mn) by Polarographic and Photometric Methods.
Orig Pub : Studii si cercetari chim. Acad. RPR Fil. Cluj, 1957, 8, No 1-2, 75-83.

Abstract : The weighed sample of the soil to be analyzed (about 5 g) is calcined at 450°, treated with 70%-ual HClO₄ (20 to 30 ml) or aqua regia with the addition of 5 ml of HClO₄ at the end, evaporated until nearly dry in a sand bath, 50 ml of 1 n. HCl is added, the mixture is boiled 30 min. with a reflux condenser, filtered,

Card 1/3

01

STĂNESCU, D.

7
Use of paper chromatography (in electrolyte solutions and
in water) for study of the structure and reaction mecha-
nisms of heteropoly acids. I. Phospho- and siliconophytic
acid. R. Ripan, A. Duca, R. Parvu, D. Stănescu, and A.
Măger (Inst. chim. acad. RPR, Cluj, Romania). Natur-
wissenschaften 44, 421-2 (1957).—Paper chromatography
in electrolyte media is a useful tool for the study of the
structure, stability, valence, pH dependence, and rate of
change of heteropoly acids. E. M. Loebli

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JF J

Application of paper chromatography (in electrolytes and in water) to the study of the structure and of the reaction mechanisms of heteropoly compounds. I. Formation of phospho- and silicomolybdic acids of the saturated type (1 R:12 Mo). K. Ripan, A. Duga, R. Paladi, D. Stanescu, and A. Mager (Inst. Chem., Cluj, Romania). *Bull. soc. chim. France* 1958, 1607-13. The behavior of different condensed molybdates derived from Na_4MoO_4 (pH 8.5-0.2) was examined. As a comparison $\text{Cr}_2\text{O}_7^{2-}$, $\text{Cr}_3\text{O}_7^{3-}$ and $(\text{NH}_4)_2(\text{Mo}_3\text{O}_10)$ of known structure were studied. Also the formation of heteropoly compds. was studied, the att. ratios. of which were 1R:1Mo to 1R:12Mo (R = B; Si, P, etc.), and each ratio for the pH range 8.5-0.2. Paper chromatography in the presence of electrolytes and in water enables the sepn. of different condensed forms according to their stability; for instance, dodecamolybdate (predominant at pH 1.25) is more stable than hexamolybdate (predominant at pH 3.8), and silicomolybdc acid (predominant at pH 1.7) is more stable than phosphomolybdc acid (predominant at pH 1.7). Qual. and quant. interpretations of the chromatograms show that for the formation of heteropoly compds. having fewer than 12Mo/R at least the hexamolybdate is needed. The formation of heteropoly acids (1R:12Mo) occurs between the isopolymolybdc groups (Mo_6 or Mo_{12}) and the radical RO_4^- (SiO_4^- or PO_4^{3-}). H-bridges are probably important for the formation of heteropoly acids. II. Study of the decomposition and stability of molybdc, phosphomolybdc, and silicomolybdc acids.

Ibid. 1614-23.—Decomprn. of isopolymolybdc acid, and of phospho- and silicomolybdc acids was made with KOH and $\text{Ba}(\text{OH})_2$. The ppt's. were formed immediately with $\text{Ba}(\text{OH})_2$, and after some standing with KOH. Analytical data and chromatograms obtained indicate that the degree of condensation of Mo may be Mo_6 in silicomolybdc acid and Mo_{12} in phosphomolybdc acid. The decomprn. steps seem to be: $\text{Mo}_6 \rightleftharpoons \text{Mo}_{12} \rightleftharpoons \text{Mo}_6 \rightleftharpoons \text{Mo}_3$. Heteropoly acids previously synthesized (P-12Mo and Si-12Mo) are more stable than those obtained by mixt. of compnts. Chromatography reveals that phospho- and silicomolybdc acids are most stable at approx. pH 1.7 for the same concn. of Mo. J. L. Boulayko

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Distr: 4E2c/4E2c(j)

STANESCU, D.

TECHNOLOGY

Periodicals: METALURGIA SI CONSTRUCTIA DEMASINI. Vol. 10,no.6, June 1950

STANESCU, D. The fast progress so the siderurgical industry in the years of people's government. p. 472

Monthly List of East European Accessions (EEAJ) LC, Vol. 8, No. 2,
February 1950, Unclass.

STANESCU, Dumitru, ing.

Achievements of the Soviet iron metallurgy, and prospects of its
future development. Metalurgia constr mas 14 no.1:1-3 Ja '62.

1. Combinatul siderurgic, Galati.

DAVID, Vladimir M., ing.; STANESCU, Dumitru, A., ing.; BIMBEA, I., ing.
CALINESCU, I., ing.; GHERGHEL, C., ing.; PAVEL, Gh., ing.;
TAFLAN, M., ing.; BOSTAN, V., ing.; KABA, E., ing.

Manufacturing metallurgic coke from gas coal by the
classic method. Metalurgia Rum 15 no.5:338-345 My '63.

GRAPA, O., dr.; STANESCU, D., dr.; BERGHEANU, S.; NEDELCU, C.

Diagnostic value of scintigrams in some hepatic diseases.
Med. intern. (Bucur.) 16 no.8:951-958 Ag '64.

"APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652820013-3

GRATI, C.; STANESCU, L.; TULCAN, F.; GOMONIU, AL.; POPESCU, C.

The diagnostic value of phosphorus uptake in cutaneous tumours.
Romanian med. rev. 19 no.246-49 Ap-Je '65.

APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652820013-3"

"APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652820013-3

STANESCU, D.; TECULESCU, D.; BULANDRA, C.; HALALAU, F.

Considerations on a case of atrial infarct. Stud. cercet. med.
intern. 6 no.2:179-184 '65.

APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652820013-3"

FLOREA, Daniela, ing; STANESCU, Eugen, ing., candidat in stiinte tehnice.

Statistical correlations between the physical and geotechnical indexes determined in the laboratory and their practical importance. Hidrotehnica 8 no.8:285-292 Ag'63

BULIGESCU, L., dr., candidat in stiinte medicale; CONSTANTIN, Ileana, dr.; FIRICA, A., dr.; MANU, P., dr.; MIRCEA, C., dr.; STANESCU, Eugenia, dr.; BARBULESCU, Alexandru, dr.

Considerations on a case of thrombocythemic megakaryocytic myelosis.
Med. intern. 13 no.10:1421-1424 0 '61.

1. Lucrare efectuata in Clinica Medicala "C. Davila".

(BLOOD DISEASES case reports)

EXPERIMENTAL
CULTIVATION OF
SUGAR-BEETING
SPEC. NO. 1, 1953, No. 1624

REPORT BY
DR. GHEORGHE POPESCU, LUDVICI*

ABSTRACT
Preliminary Studies on the Introductory Cultivation of
Annual Fibrous Plants in the Danube Delta.

SPEC. NO. 1, 1953, No. 1624, JURN. SI
ABSTRACT
In order to utilize localities which are unsuitable for
the cultivation of other plants, in the year 1953 experiments were begun in the cultivation of Italian cane, juncos,
barbo and red osier willow which find application in the paper industry.

* Popescu, George

STANESCU, E.

Some aspects of the theory of pile foundation and of its practical application. p. 334
(INDUSTRIA CONSTRUCTIILOR SI A MATERIAIELOR DE CONSTRUCTII. No. 6, 1957, Rumania)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 2, No. 12, Dec. 1957
Uncl.

STANESCU, E.; ANDREI, S.

TECHNOLOGY

REVISTA CONSTRUCTILOR SI A MATERIALELOR DE CONSTRUCTII. Vol. 10, no. 11,
Nov. 1958.

Nomogram for computing the consolidation of foundations. p.554.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 5
May 1959, Unclass.
Maox2

JUSTER, E., ing.; LOGHIN, A., ing. si candidat in stiinte tehnice;
STANESCU, E., ing.

Realization of a calking veil in alluvial soils by means of injection
method. Hidrotehnica 6 no.12:430-438 D '61.

(Alluvium) (Calking)

"APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652820013-3

EFTIMIE, A., ing.; MILITARU, Al., geofizician; STANESCU, E., ing.,
candidat in stiinte tehnice

Use of radioactive isotopes in the control of packing in
earth weirs. Hidrotehnica 7 no.3:82-85 Mr '62.

APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652820013-3"

STANE3CU, E., candidat^ă în stiinte tehnice ing.; RADULESCU, D., ing.

Experimental study of swelling of clayey rocks in hydrotechnical galleries. Hidrotehnica 7 no.8:263-273 Ag '62.

STANESCU, G.

TECHNOLOGY

Periodicals: CELULOZA SI KIRTIE. Vol. ?, no. 5, June 1958

STANESCU, G. Executed works and their bearing upon the increase of production capacity of the FortunaSontea reed terrain. p. 231.

Monthly List of East European Accessions (EEAI) IC, Vol. 8, No. 2,
February 1959, Unclass.

STANESCU, G.

Distr: 1423d

✓ Colorimetric determination of small amounts of calcium
G. Stanescu, *Rev. chim. (Bucharest)* 8, 280-1 (1957). — In
this procedure the Ca ion is pptd. with a soln. of K oxalate of
known concn. After centrifugation, the concn. of the super-
natant oxalate soln. is detd. colorimetrically. The differ-
ence between the initial concn. and the final concn. of the K
oxalate soln. gives the amt. of Cu present in the sample.
The colorimetric detn. of the oxalate is based on the discolora-
tion of a standard soln. of Fe thiocyanate. The abs. error
found with this procedure varied from +1.1% to -3.38%.

R. Mavrodineanu

gr J

3

STANESCU, Gh.; MIHAESCU, Odette; TANASESCU, Victoria

Characteristics of the international fashion line and its application to the conditions of Rumania. Ind text Rum 15 no.7:
368-370 JI'64

1. Ready-made Clothes and Knitwear Manufacture, Bucharest.

STANESCU, Gh.; LIVIANU, V.; STREESCU, O., ing.; SPITZER, Gh., ing.; NICOLAE, Bedea; IONESCU, Elena; OPROIU, Tereza, ing.

High valorization of raw materials in light industry.
Probleme econ 17 no.9:159-162 S '64.

1. Technical Director, Ready-made Clothes and Knitwear Factory, Bucharest (for Stanescu).
2. Chief Engineer, Ready-made Clothes and Knitwear Factory, Bucharest (for Livianu).
3. Technical Director, the "30 Decembrie" Textile Works, Arad (for Stanescu).
4. Head of the Production Office, the "30 Decembrie" Textile Works, Arad (for Spitzer).
5. Director, the "Intex" Flax Weaving Mill, Paulesti (for Nicolae).
6. Chief Engineer, the "Intex" Flax Weaving Mill, Paulesti (for Ionescu).
7. Head of the Technical Office, the "Intex" Flax Weaving Mill, Paulesti (for Oproiu).

STANESCU, Gh.

How the council plenary meetings of a local trade union
and the conferences of a trade union executive committee
are prepared. Munca sindic 7 no.8:45-47 Ag '63.

1. Presedintele Consiliului local al sindicatelor, Pitesti.

IOANID, N., prof.; BORS, Gh., conf.; STANESCU, Gh., ing.; PAPA, I., dr.

Contributions to the problem of degassing cereals subjected
to disinfection with hydrocyanic acid. Pt.2. Ind alim veget
13 no.2:45-48 F '62.

IOANID, N., prof; BORS, Gh., conf.; STANESCU, Gh., ing.; POPA, I., dr.

Contributions to the problem of degassing cereals subjected
to disinfection with hydrocyanic acid. Pt.1. Ind alim veget
13 no.1:3-5 Ja '62.

1. Decan, Facultatea de farmacie (for Ioanid).
2. Facultatea de farmacie (for Bors).
3. Director din C.S.V.P.A. (for Stanescu).
4. Sef lucrari, Institutul de medicina judiciara (for Popa).

RUMANIA/Cultivated Plants. Technical Plants. Oil and II
Sugar Beering Plants.

Abs Jour : Ref Zhur-Bicl., No 15, 1958, 68302

Author : Cojocaru, C., Arfice, N., Stancescu, Gh.

Inst : T.M.Iisoara Institute of Agronomy.

Title : Some Data on the Agricultural Engineering
Techniques Used in Growing Sugar Beets for
Seed.

Orig Pub : Anuarul. lucrar. stient. Inst. agron. Timis-
soara, Bucuresti, 1957, 83-93

Abstract : If the seed plants are transplanted early,
the seed yield increases by 5 centners/hectare.
Dirt was piled up around the stalks to protect
them from frosts. The square-nest method of
planting (50 x 50 cm) gave the highest seed
yields (20.8 centners/hectare). The weight of

Card : 1/2

STANESCU, Gratiela; KEUL, Mariana

Infrared absorption spectra of some derivatives of the indan series. Rev chimie Min petr 13 no.5:294-297 My '62.

STANESCU, Gratiela

Determination of aldrin by infrared spectrophotometry. Rev chimie
Min petr 13 no.6:370-371 Je '62.

"APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652820013-3

STANESCU, Gratiela

Studies of polymers with the aid of infrared spectroscopy.
Rev chimie Min petr 14 no.1:42-45 Ja '63.

APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652820013-3"

STANESCU, Gratiela; RADULESCU, Olga; KEUL, Mariana

Infrared spectrophotometric methods for the analysis of some
organophosphoric insecticides. Rev chimie Min petr 15 no.7:
416-419 Jl '64

L 31444-66 EXP(j) 14

ACC NR: AP6023173

SOURCE CODE: RU/0003/65/016/002/0076/0080

37
BAUTHOR: Barbuilescu, N.; Leca-Manecuta, M.; Stanescu, Gr.

ORG: none

TITLE: Dehydration of diols derived from 2,3-cyclohexano-bicyclo-[3.3.1]-nonane

SOURCE: Revista de chimie, v. 16, no. 2, 1965, 76-80

TOPIC TAGS: condensation reaction, aldehyde, IR spectrum, UV spectrum, aromatic hydrocarbon, dehydration

ABSTRACT: The authors studied the conditions as well as the reduction mechanism of the carbonyl groups of some tricyclic ketols resulting from the condensation of aldehydes with cyclohexanone. They synthesized condensed cyclic hydrocarbons and were able to clarify some theoretical questions relating to ketonic condensation and cetyl dehydration reactions. Infra-red and ultra-violet spectral analysis was used in the study. Orig. art. has: 6 figures and 4 tables. [Based on author's Eng. abst.] [JPRS]

SUB CODE: 07 / SUBM DATE: none / ORIG REF: 006 / SOV REF: 005
OTH REF: 015

Card 1/1 JT

0915

1384

L 39130-66

ACC NR: AP6030348

SOURCE CODE: RU/0003/65/016/003/0159/0161

35

B

AUTHOR: Stanescu, Gratiela; Bozgan, Viorica

ORG: none

TITLE: Infrared absorption spectra of calcium sulphate resulting from the preparation of phosphoric acid

SOURCE: Revista de chimie, v. 16, no. 3, 1965, 159-161

TOPIC TAGS: IR spectroscopy, phosphoric acid, calcium sulfate

ABSTRACT: The authors used precipitate, obtained from infrared spectroscopy, to establish the reaction time required for the formation of gypsum as the stable form during the preparation of phosphoric acid from Vietnamese phosphorites. Orig. art. has: 4 figures and 2 tables. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 07 / SUBM DATE: none / ORIG REF: 002 / SOV REF: 001
OTH REF: 009

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Card 1/1

10/11/1971

STANESCU, I.

New construction of blades for turners' lathes, with prismatic plates of hard alloy, and with many more edges. p. 17. METALURGIA SI CONSTRUCTIA DE MASINI. (Ministerul Industriei Metalurgice si Constructiilor de Masini si Asociatia Stiintifica a Inginerilor si Tehnicielor) Bucuresti.

Vol. 7, no. 11, Nov. 1955.

SOURCE: East European Acquisitions List, (EEAL), Library of Congress,
Vol. 5, No. 11, November, 1956.

STAMPSCH, I.

Analysis of methods for increasing the durability of
blades of cutting tools. p. 20. METALURGIA SI CON-
STRUCTIA DE MASINI. (Ministerul Industriei Metalurgice
si Constructiilor de Masini si Asociatia Stiintifica
a Inginerilor si Technicielor) Bucuresti.
Vol. 8, no. 4, Apr. 1956.

SOURCE: East European Accessions List (EEAL) Library of Congress,
Vol. 5, No. 11, November, 1956.

CASANDROIU, T., elev (Ploiesti); DUMITRESCU, Florea I. (Craiova);
MUNTEANU, I., prof. (Vaslui); METTLER, Martin, prof. (Viseul de
sus); TOMOLOAGA, D.M.; IONESCU-TIU, C.; STANESCU, I., (Sibiu);
SULA, Octavian (Valea Rea, Iasi); POPA, Eugen, elev (Iasi)

Problems and exercises proposed for grades 5-8. Gaz mat B 14:
563-565 9 S '63.

STANESCU, I. (Sibiu); STANESCU, Ilie, Prof. (Sibiu); CUCOS, Stefan, prof.
(Birlad); CASANDROIU, T.C., student (Bucuresti); IONESCU-PIU, C.
DRAGULESCU, Emilian, elev (Baia de Arama); ATANASIU, Ionel, prof.
(Gugesti); BATINETU, D.M., student (Bucuresti)

Problems and exercises proposed for grades 5-8. Gas mat B 14
no. 10:628-630 0'63.

STANESCU, I. (Sibiu); STANESCU, Ilie, Prof. (Sibiu); CUCOS, Stefan, prof.
(Birlad); CASANDROIU, T.C., student (Bucuresti); IONESCU-PIU, C.
DRAGULESCU, Emilian, elev (Baia de Arama); ATANASIU, Ionel, prof.
(Gugesti); BATINETU, D.M., student (Bucuresti)

Problems and exercises proposed for grades 5-8. Gas mat B 14
no. 10:628-630 0'63.

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IONESCU, E., dr.; IONESCU, Zenobia, dr.; LUNGU, Felicia, dr.;
SALOMIN, Nadia, dr.; SAVIN, Valentina, dr.; STANESCU, I., dr.;
STOICA, V., dr.; SERBAN, N., dr.; VISAN, Valeria, dr.

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Density of the hydrographic system in the Ceahlau Massif. Anal
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1. Submitted October 26-27, 1963.

"APPROVED FOR RELEASE: 08/25/2000

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STANESCU, I., coresp.

In the proportion of 100.1%. Constr Buc 17 no.800:1 8 My '65.

APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652820013-3"

"APPROVED FOR RELEASE: 08/25/2000

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STANESCU, I.

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APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652820013-3"

STANESCU, I.

SURNAME (in caps); Given Names

5

Country: Rumania

Academic Degrees: Engineer

Affiliation: Research Institute for the Cultivation of Corn (Institutul de Cercetari pentru Cultura Porumbului).

Source: Bucharest, Probleme Zootehnice si Veterinare, No 6, 1961,

pp 18-23.

Data: "The Economic Efficiency of the Valuation of Corn in the Feeding of Milk Cows."

Co-authors:

POPOVICI, V.V., Engineer, Research Institute for the Cultivation of Corn (Institutul de Cercetari pentru Cultura Porumbului).

CRISAN, I., Engineer, Research Institute for the Cultivation of Corn (Institutul de Cercetari pentru Cultura Porumbului).

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METALURGIA SI CONSTRUCTIA DE MASINI. (Ministerul Industriei Metalurgice si Construc-
ctiilor de Masini si Asociatia Stiintifica a Inginerilor si Tehnicienilor din
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Monthly list of East European Accessions (EEAI) LC, no. 8, Aug. 1959
VOL P

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1-BW(JN)

The theory of the overvoltage of hydrogen. E. Chifu and L. Stăneagu. *Bul. științ. "Babeș" și "Horea"*, Cluj, Ser. Chim., vol. 1, Nos. 1-2, 185-202 (1957).—The different theories of the overvoltage of H are criticized. The theory of "slow discharge" is not considered satisfactory because the dependence of the overvoltage on the compn. of the soln. is not taken into account sufficiently. All theories contain arbitrary coeffs. whose values are insufficiently proved. Most authors express the overvoltage as a function of the d. of the current, as in the equation of Tafel: $\eta = a + b \log i$, but this equation explains nothing about the nature of the overvoltage. The assumption of a slow phase agrees in fact with the detn. of the order of the electrode reaction, but this is considered an insufficient criterion, because the real cause of the overvoltage, namely the irreversibility of the phenomenon, is not emphasized. The existence of a high activation energy does not imply necessarily the existence of the overvoltage since the process on the electrode could be in principle perfectly reversible and the surplus of elec. energy spent could be regained in an active electromotive form. The real cause of the overvoltage is attributed to the irreversibility of the phenomenon and, at least partially, the elec. energy is transformed into heat. The exptl. material, like the influence of the pH, the capacity of the elec. double layer in the a.c., the value of the coeff. b in the Tafel equation, the speed of the cathodic reductions, the nature of the solvent, etc., indicate an arrangement of the cathodes into 2 groups. (A) cathodes with elevated overvoltage Hg, Pb, Cd, etc. (B) cathodes with low over-

voltage: Pt, Ni, Fe, Au, etc. In the group A it may be admitted, especially in the case of Hg, that the slow phase is that of discharge; in the group B it is the elimination of H.
Mella Paecht-Horowitz

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5(3)

R/003/60/011/03/005/026
D0016/D3001

AUTHOR: Săndulescu, D., Stănescu, L., Ionescu, Al.Gh.

TITLE: The Study of Catalysts by Gas Chromatography.
Part I. Chromatographic Characteristics of Oxide
Catalysts for the Polymerization of Olefins

PERIODICAL: Revista de Chimie, 1960, Vol 11, Nr 3, pp 151-155

ABSTRACT: The authors describe their studies on the chromatographic behavior of silicon-alumina basis and catalysts of ethylene polymerization. The work carried out by the authors included the study of chromatographic characteristics, the volume of retention and the elution peak. It was established that ethylene and propylene are chemically absorbable by the basis even with temperatures ranging from 0° to 100°C. The authors also explain the influence of chromium oxide on the activities of the catalyst and interpret the influence of the activating tem-



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D0016/D3001

The Study of Catalysts by Gas Chromatography. Part I. Chromato-
graphic Characteristics of Oxide Catalysts for the Polymerization
of Olefins

perature. They show that the important process in polymerization is the surface mobility of the carbon ion and not its formation. The article shows the preliminary data obtained by studying catalysts of silicon-alumina with chromium oxide by applying gas chromatography. The work represents an experiment to establish new evaluation methods, clarifying also the action of the catalyst. Many treatises on the catalysts activities, especially their acid properties, dealt with these problems, such as the works by Lewis and Brönsted. A complete study was contributed by Miesserov [Ref 2, 3] whereas a comparison between the different types of catalysts can be found in the works by Frost [Ref 4] and Handford [Ref 5]. Recently it was made clear that the most active regions

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R/003/60/011/03/005/026
D0016/D3001

The Study of Catalysts by Gas Chromatography. Part I. Chromato-
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of Olefins

of the silicon-alumina catalysts correspond to a great extent to Lewis acids. It is evident that in these reactions the basis intervenes directly, due to the potential function of Lewis acids to form carbon ions, necessary in polymerization (according to Whitmore), but the influence of chemical compositions and other factors is not yet sufficiently known. A recent work [Ref 8] shows the parallel between the surface acidity of the catalyst and the conversion of propylene in the polymerization reaction. In another recent work [Ref 9] the magnetic properties of the chromium-silicon-alumina oxide system are studied for the purpose of defining the catalytic action by using the oxidation number and the distributing of chromium on the basis; it is shown that the basis has a strong influence upon the oxidation phase of chromium during activation.

Card 3/5

R/003/60/011/03/005/026
D0016/D3001

The Study of Catalysts by Gas Chromatography. Part I. Chromato-
graphic Characteristics of Oxide Catalysts for the Polymerization
of Olefins

The authors tested the silicon-alumina basis and catalysts with chromium oxide activated at 500 to 600°C. Granulation was 0.15 to 0.4 mm. Ethylene and propylene manufactured by ICECHIM had an impurity content of less than 0.5%. Prior to the determination, the sample was tried by passing a hydrogen current at 120-150°C for one hour. The "T₁" and "T₂"

translators, which are part of the chromatographic installation in the gas phase (Figure 1) build a derivation of a Wheatstone bridge. The second derivation is made of a potentiometric wire belonging to a Heyrovsky micro-polarograph. Figure 2 shows that in the case of ethylene, the introduction of chromium



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R/003/60/011/03/005/026
D0016/D3001

The Study of Catalysts by Gas Chromatography. Part I. Chromatographic Characteristics of Oxide Catalysts for the Polymerization of Olefins

and the activation at 500°C and 600°C does not essentially modify the retention volume and its variation of temperature. Results obtained by the authors are in conformity with the observations by Clark [Ref 14]. The authors also agree with Millinken [Ref 16] in their criticism of the evaluation method of the catalytic activity by acidity titration. There is 1 figure, 2 graphs and 17 references, 9 of which are English, 5 Rumanian, 2 Soviet and 1 German.

ASSOCIATION: Institutul de Cercetări Chimice (Chemical Research Institute), Bucharest

Card 5/5

Surname, Given Names

STANESCU, I.

Country: Rumania

Academic Degrees: [not given]

Affiliation: Chemical Research Institute (Institutul de Cercetari Chimice).

Source: Bucharest, Revista de Chimie, Vol 12, No 8, Aug 1961, pp 503.

Data: "A Catalyzed Diels-Alder Reaction."

Authors:

BOTA, T.

BUCUR, C.

DRIMUS, I.

STANESCU, I.

SANDULESCU, D.

GPO 981643

E

Country : RUMANIA
Category: Analytical Chemistry. Analysis of Inorganic Substances

Abs Jour: RZhKhim., No 17, 1959, No. 60506

Author : Stanescu, L.

Inst : -
Title : Polarographic Determination of Titanium in Alluvial Sands

Orig Pub: Rev. chim., 1958, 9, No 7-8, 460-461

Abstract: For the determination of Ti in alluvial sands and in titanium concentrates (1-60% TiO_2), a polarographic method is developed, based on the reduction of $Ti^{(4+)}$ buffered by 0.2 M $H_2C_2O_4$ -0.5M H_2SO_4 . Elements interfering (Fe) are first removed, employing the electrolysis method with

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E

Country : RUMANIA
Category: Analytical Chemistry. Analysis of Inorganic Substances

Abs Jour: RZhKhim., No 17, 1959, No. 60506

Hg - cathode. In so doing a portion of $Ti^{(4+)}$ is reduced to $Ti^{(3)}$, which is then reoxidized with HNO_3 solution. E_1^2 for Ti = 0.28 b at 0.5 pH (25°). In the Ti determination 1 gr of the analyzed substance is treated with a mixture of H_2SO_4 and HF (for the removal of SiO_2), then it is fused with 10 gr $K_2S_2O_7$, the obtained melt is dissolved in H_2SO_4 (1:3) and the solution is diluted with water up to 250 ml volume. 50 ml of this latter solution are subjected to electrolysis for approx. 30 minutes at 4-6 v and 8-10 a. 2-3 ml of concentrated HNO_3 are then added to

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STANESCU, L.; GOCAN, S.; TERTAN, A.; MOTIU, A.; BOGATEANU, G.;
POP, O.

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L. Institutul de cercetari chimice.

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SANDULESCU, D.

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1. Institutul de cercetari chimice.

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STANESCU, Ioan, D.

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1. Deputy Director, Ministry of Mines and Electric Power, Rumania.

STANESCU L. dr.

FODOR, O., Conf.; STANESCU, L., dr.

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Med. int., Bucur. 4 no.8:1115-1120 Dec 56.

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hyperthyroidism, latent)

(HYPERTHYROIDISM, complications
congestive heart failure in latent hyperthyroidism)

FODOR, O.; STANESCU, I. [Stanescu, I.]; DZHEORDZHESKU, Ye. [Georgescu, E.]
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NICOARA, Gh., dr.; BAN, A., dr.;

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(LUNG DISEASES case reports)
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FODOR, O., prof.; STANESCU, L., dr.; COSMA, V., dr.; ITU, I., dr.; FRATILA, I., dr.; MUNTEANU, P., dr.; SCHWARTZ, M., dr.; CIOFU, Gh., dr.; ILEA, V., dr.; COTUL, S., dr.; DUMITRASCU, D., dr.; BORSAN, I., laborant

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GOCAN, Simion; STANESCU, Iiviu

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STANESCU, M., candidat in stiinte economice

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